

REMARKS

The Examiner is thanked for the thorough review of the present application. As attached herewith, independent claim 11 has been amended, to recite that the print mark measuring device includes a camera configured to record or pick up a print mark of a paper track. Additionally, independent claim 11 has been amended, to recite that the print mark measuring device is directly connected to the control unit to transmit a signal of the print mark to the control unit. Additionally, independent claim 11 has been amended, to recite that a correction factor is determined by the control unit, based on the print mark signal, to regulate the movement of the drive unit and improve a print image of the print mark. Independent claims 29 and 31 have been amended in a similar manner as independent claim 11. Support for these amendments is provided below in the Response to the rejections under 35 USC 112. Thus, no new matter is presented by these amendments.

Claims 11-12, 18, 22-23, 29, 31 and 34 are currently pending and presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

Response to Rejection of Claims 11, 12, 18, 22-23, 29, 31 and 34 under Section 112:

The Examiner rejected independent claim 11 under 35 USC §112, first paragraph, as failing to comply with the written description requirement, and contended that the amended language does not find proper support in the Substitute Specification.

As discussed above, independent claim 11 has been amended, to recite that the print mark measuring device includes a camera configured to record or pick up a print mark of a paper track. Indeed, the Substitute Specification discloses that the print mark measuring device includes a “CCD camera” (paragraph [0011]); that print marks are “recorded” or “picked up” by a sensor (paragraph [0005]; and that the print mark measuring device is one type of such “sensor” (paragraph [0032]).

Additionally, independent claim 11 has been amended, to recite that the print mark measuring device is directly connected to the control unit to transmit a signal of the print mark to the control unit. Indeed, the Substitute Specification discloses that the print mark measuring device transmits a “print mark signal” to the control unit, which includes data of the print mark (paragraph [0011], [0033]).

Additionally, independent claim 11 has been amended, to recite that a correction factor is determined by the control unit, based on the print mark signal, to regulate the movement of the drive unit and improve a print image of the print mark. Indeed, the Substitute Specification discloses that the control unit “determines the correction factor for the drive unit...to improve the print image” (paragraph [0029]) and that the control unit receives the “print mark signal” from the print mark measuring device in order to calculate the correction factor (paragraph [0035]).

As shown above, amended independent claim 11 has adequate support within the Substitute Specification. As discussed above, independent claims 29 and 31 were amended in a similar manner as independent claim 11, and thus amended independent claims 29 and 31 also have adequate support within the Substitute Specification. Indeed, claims 11, 12, 18, 22-23, 29, 31 and 34 comply with the written description requirement and accordingly, these rejections should be withdrawn.

Rejections of Claims 11, 12, 18, 22, 23, 29, 31 and 34 under Section 103:

The Examiner rejected independent claim 31 under 35 USC §103(a) as being unpatentable over Kot in view of DE 19723059 and Tokiwa. As discussed above, independent claim 31 recites a print mark measuring device and/or register mark measuring device and/or a register measuring device including a camera configured to record or pick up a print mark, and being directed connected to the control unit, to transmit a signal of the print mark to the control unit. Additionally, independent claim 31 has been amended, to recite that the correction factor is calculated by the control unit, based on the print mark signal, to regulate the movement of the drive unit. None of the Kot, DE 19723059 or Tokiwa references, alone or in combination, disclose these recitations and accordingly, amended independent claim 31 is patentable.

In rejecting previously-unamended claim 31, the Examiner conceded that Kot failed to disclose a correction factor calculated by the control unit to regulate the movement of the drive unit, looked to Tokiwa to provide this noted deficiency, and cited to FIG. 3 and col. 16, lines 5-24 in support thereof. Specifically, the Examiner contended that the value S2 is the recited “correction factor”, that the slave control section 3 is the recited control unit and that the motor driver 41 is the recited drive unit. In support of this contention, the Examiner stated “in so far as the correction factor is defined in the pending claims, the teaching of Tokiwa fully meets the

requirement that a correction factor is calculated by the control unit to regulate the movement of the drive unit as recited.” (Office Action, p. 11).

However, as discussed above, the relevant claim language has been amended, to recite that a print mark measuring device and/or register mark measuring device and/or a register measuring device is includes a camera configured to record or pick up a print mark, and that the correction factor is calculated by the control unit, based on the print mark signal, to regulate the movement of the drive unit. Tokiwa discloses that each printing mechanism P is driven by “an independent driving means M” (col. 5, line 32), and that each driving means M has a slave control section 3 and rotary encoder 6 “that outputs first pulse signals (hereinafter pulse signals) of a quantity proportional to the amount of rotational angular displacement of the M, and a second pulse signal (hereinafter referred to as Z-phase pulse signal) for one turn of the driving means M.” (col. 5, lines 40-48). Tokiwa discloses that the feedback speed signal output section 39 “integrates the pulse signals output by the encoder 6, calculates a value S2 proportional to the rotational speed of the driving means M” using the equation cited by the Examiner at col. 16, line 25. Thus, neither the encoder 6 nor the output section 39 is a camera to record the print mark, as recited in amended independent claim 31. Indeed, the S2 value is based on the pulse signals that are proportional to the amount of rotational angular displacement of the driving means M. Thus, the S2 value is expressly based on the rotational angular displacement of the driving means M, and is not based on a print mark signal or a recorded print mark by a camera, as recited in amended independent claim 31. Accordingly, none of the prior art references, alone or in combination, disclose the claimed invention, as recited in amended independent claim 31.

The Examiner further contended that it would have been obvious to modify the control and regulation device 12 of Kot such that it is capable of computing the value S2 taught in Tokiwa proportional to the rotational speed of the adjusting devices 10,11 of Kot “so as to predictably result in increasing the accuracy and speed in controlling the drive unit.” (Office Action, p. 7). However, even if such a modification was obvious, it would destroy the purpose and/or operability of Kot. The control and regulating device 12 in Kot compares actual deviations of the marks 9, 15 and 16 relative to the line 14, with desired deviations, and transmits actuating variables to the adjusting devices 10,11, based on this comparison. Thus, Kot emphasizes that the adjusting devices 10,11 should be actuated in the appropriate x,y, directions, based on this comparison. If the Examiner’s suggested modification of Kot were performed, in

which the control and regulating device 12 were instead assigned to determine some corrective rotational speed of the adjusting device 10,11, the control and regulating device 12 would entirely disregard the deviations of the marks 9, 15 and 16 relative to the line 14, as well as determining an actuating variable of the adjusting devices 10,11 in the x,y directions, and instead would determine some corrective rotational speed of the adjusting devices 10,11, which has no bearing on the actual and desired deviations of the marks 9, 15 and 16, relative to the line 14. Since the suggested modification would destroy the purpose of Kot, it cannot form the basis of the modification of Kot. MPEP §2143.01. Accordingly, amended independent claim 31 is patentable.

Accordingly, amended independent claim 31 is patentable. Amended independent claims 11 and 29 include recitations which are similar to independent claim 31. The arguments stated above with regard to amended independent claim 31 are restated herein with regard to amended independent claims 11 and 29. Accordingly, amended independent claims 11, 29 and 31 are patentable. Their dependent claims, which recite yet further distinguishing features, are also patentable, and require no further discussion herein.

Conclusion

Accordingly, Applicants respectfully request that the Examiner timely pass the application to allowance. Please grant any extensions of time required to enter this paper. The Commissioner is hereby authorized to charge any appropriate fees due in connection with this paper or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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